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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,196	09/19/2001	Hiroto Hirakoso	SON-2213	9433

23353 7590 12/04/2006

RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER	
TUCKER, WESLEY J	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,196	HIRAKOSO, HIROTO	
	Examiner	Art Unit	
	Wes Tucker	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's response to the last Office Action, filed September 22, 2006 has been entered and made of record.

2. Applicant has not amended claims any claims. Claims 1-8 are pending.

3. Applicant's arguments, with respect to the rejections of claims 1-8 have been considered and are found to be persuasive for at least the following reasons:

Applicant has pointed out that the cited reference to Okada relied upon in the previous rejection was actually owned by the same assignee as the present application and therefore cannot be applied in a 103 rejection. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. A new rejection is presented below with different prior art.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,510,254 to Nakami et al. and U.S. Patent 6,707467 to Suga.

With regard to claim 1, Nakami discloses an image processing method for a digital image, characterized in that interpolation signals between discrete original pixels used for calculating an output pixel value are calculated using as an interpolation function a function obtained by on composing a function based on a cubic convolution method and a function based on a bilinear method (Fig. 19). Nakami teaches that this hybrid (bilinear/cubic) bicubic function is useful in increasing the sharpness of the image (column 12, lines 25-30). Nakami also teaches that the amount of computation is becomes increasingly larger for the cubic method and that the trade off between image quality/sharpness and processing speed is optimal using the bicubic function (column 12, lines 30-39).

Nakami does not explicitly disclose an FIR digital filter using the interpolation function. FIR filters are exceedingly well known in the art to be used in interpolation. Suga teaches that FIR filters are known to be used for both linear and cubic interpolation methods (column 2, lines 23-40). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use an FIR filter to output the interpolated data from the linear and cubic interpolation method of Nakami as taught by Suga.

With regard to claim 2, the combination of Nakami and Suga disclose the image processing method as claimed in claim 1. Nakami discloses wherein said interpolation function is a function that is obtained by composing a part of the function based on the cubic convolution method and a part of the function based on the bilinear method. Nakami further discloses where the interpolation is asymmetric with respect to the right and left (Fig. 19). The discussion of the use of an FIR filter as taught by Suga with regard to claim 1 also applies.

With regard to claim 3, the discussion of claim 1 applies. Nakami discloses an apparatus to be used with his method (Fig. 2).

With regard to claim 4, the discussion of claim 2 applies. Nakami discloses an apparatus (Fig. 2) and discloses the asymmetric interpolation function (Fig. 19).

With regard to claim 5, Nakami and Suga disclose the method as claimed in claim 1, and they are both considered to disclose that the method is for use in enlarging or reducing the digital image because that is what interpolation is inherently used for. When interpolation is performed pixels are created or reversely they are deleted inherently expanding or decreasing the image.

With regard to claim 6, the discussion of claim 5 applies.

With regard to claim 7, the discussion of claim 3 and claim 1 apply. Both the references to Nakami and Suga are interpreted to operate as electronic devices (Suga Fig. 1B and Nakami Fig. 2).

With regard to claim 8, the discussion of claim 5 applies.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 571-272-7427. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wes Tucker

11-28-06

JINGGE WU
PRIMARY EXAMINER